

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

**ORIGINAL**

In the Matter of )

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Revision of the Commission's Rules to Ensure )

CC Docket No. 94-102

Compatibility with Enhanced 911 Emergency )

DA 99-1049

Calling Systems )

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To: Chief, Wireless Telecommunications Bureau

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

**COMMENTS OF AIRTOUCH COMMUNICATIONS, INC.**

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**COMMENTS OF AIRTOUCH COMMUNICATIONS, INC.**

AirTouch Communications, Inc. ("AirTouch"), on behalf of its subsidiaries and affiliates, hereby submits comments in response to the Commission's *Public Notice*, dated June 1, 1999, seeking targeted comment on Phase II Automatic Location Identification ("ALI") standards for handset-based approaches and related issues.<sup>1</sup>

AirTouch emphasizes that it takes its E911 obligations seriously, and is working diligently to comply with existing requirements. At this point, the Company has not determined whether it will pursue a network, handset, or hybrid solution to the Phase II requirements. As the record indicates, not only is there conflicting information regarding the technical feasibility and reliability of the various solutions, the costs for each are still unresolved. It must be emphasized at the outset that there is currently no commercially available Phase II solution ready for carrier deployment. AirTouch has not ruled out any option, and retains the right to alter course even after it selects a possible solution, as long as compliance with the Commission's rules can be assured.

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<sup>1</sup> See *Public Notice*, CC Docket No. 94-102, *Wireless Telecommunications Bureau Requests Targeted Comment on Wireless E911 Phase II Automatic Location Identification Requirements*, DA 99-1049 (June 1, 1999) (*Notice*).

While AirTouch has not decided what Phase II ALI solution it will pursue, it does believe that the current rule is not technically and competitively neutral, and the rule is therefore deficient. Recent developments require Commission modification of current requirements — by waiver grant or rule change — to permit the development of a handset or even hybrid alternatives in addition to the contemplated network-based solution for Phase II, which is still being worked on.<sup>2</sup>

Accordingly, AirTouch submits these comments to assist the Wireless Telecommunications Bureau (“Bureau”) in promulgating Phase II standards for handset approaches, to assuage concerns regarding roamers, and to support modification of the current methodology for determining ALI accuracy under Phase II. To confirm, by filing these comments, AirTouch seeks only to facilitate the potential development of further Phase II ALI solutions, and its comments should not be seen as an endorsement of any one particular solution, none of which has been finally determined to be viable, to date.

## **INTRODUCTION AND SUMMARY**

Section 20.18(e) of the Commission’s Rules requires covered wireless carriers to deploy ALI as part of E911 service beginning October 1, 2001, provided the Public Safety Answering Point (“PSAP”) has requested the service and is capable of using it, and a cost recovery mechanism is in place.<sup>3</sup> The Commission has specified that Phase II requires carriers to have the “capability to identify the latitude and longitude of a mobile unit making a 911 call, within a radius of no more

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<sup>2</sup> Although redress of this issue to date has focused primarily upon a possible waiver of Section 20.18(e), AirTouch suggests that a rule change based upon the current record may be appropriate, particularly given the general applicability of the changes under consideration. *See Notice* at 2.

<sup>3</sup> 47 C.F.R. § 20.18(e), (f).

than 125 meters in 67 percent of all cases,” using root mean square (“RMS”) techniques.<sup>4</sup> This rule was adopted at a time when it was assumed that only a network-based solution would be capable of providing Phase II ALI.

AirTouch and others have previously shown that such a rule does not permit the phased-in deployment that a handset-based solution requires, thus limiting carriers to a network-based solution in the absence of a rule waiver or modification.<sup>5</sup> As a result, the rule contradicts the Commission’s stated goal of ensuring that efforts to deploy Phase II ALI are “technologically and competitively neutral.”<sup>6</sup> The Commission has recognized this, noting that “the effect of Section 20.18(e) might not be technologically and competitively neutral for some technologies that might be used to provide ALI, particularly handset-based technologies such as those using the Global Positioning Satellite (GPS) system.”<sup>7</sup> To give consumers a potentially beneficial choice and allow the marketplace to work, the Commission should grant the pending Phase II waiver requests — or modify the rule — to allow the use of a handset solution as well as a network solution (or a hybrid of both). As

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<sup>4</sup> *Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, *First Report and Order and Further Notice of Proposed Rulemaking*, 11 F.C.C.R. 18676, 18712 (1996) (*E911 Report and Order*); *Memorandum Opinion and Order*, 12 F.C.C.R. 22665, 22726 (1997) (*E911 MO&O*); 47 C.F.R. § 20.18(e).

<sup>5</sup> See *AirTouch Communications, Inc., Petition for Waiver*, at 4-5, 18 (Feb. 4, 1999) (“*AirTouch Waiver Petition*”); *AirTouch, Reply Comments*, at 3 (Feb. 22, 1999) (“*AirTouch Waiver Reply*”); see also *Ameritech Corp., Petition for Waiver*, at 7 (Feb. 4, 1999); *AT&T Wireless Services, Inc., Petition for Waiver*, at 3 (Feb. 4, 1999); *PrimeCo Personal Communications, L.P., Petition for Waiver*, at 7 (Feb. 4, 1999); *SnapTrack, Inc., Comments*, at 2 (Feb. 22, 1999) (“*SnapTrack Waiver Comments*”).

<sup>6</sup> *E911 MO&O*, 12 F.C.C.R. at 22725.

<sup>7</sup> *Notice* at 1 (citing *E911 MO&O*, 12 F.C.C.R. at 22725).

demonstrated herein and in the record, such a result will have significant public interest benefits, and the Commission should act promptly in ways to facilitate carrier choice in this regard.

AirTouch continues to be very active in the assessment and planning for location determining technology, and has had numerous contacts with manufacturers, vendors, and standards bodies concerning ongoing work in this area. Recently, for example, it sent out three Requests for Information (“RFIs”) to 18 different vendors covering network-based solutions, handset solutions, and the common network aspects, in order to better understand the costs involved and the capabilities of each for planning purposes. AirTouch is also part of a test group testing “alpha” prototypes of ALI-capable handsets,<sup>8</sup> and remains committed to trialing these and other technologies, both handset and network-based, in the near future, contingent on its requirements being met. In order to make a decision on which solution, or a hybrid of the two, to choose, AirTouch and other carriers need to know with greater certainty what the FCC’s requirements are going to be on this issue. For this reason, prompt FCC action is essential.

AirTouch does note that the developing record in this proceeding demonstrates that handset-based solutions initially appear to be very promising, both in terms of improved accuracy and coverage over network solutions, and in terms of potential cost savings.<sup>9</sup> These potential cost savings in Phase II could be significant, especially in light of the Commission’s recent announcement regarding problems with both costs and cost recovery in Phase I.<sup>10</sup> Accordingly, AirTouch

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<sup>8</sup> See AirTouch Waiver Petition at 9.

<sup>9</sup> See AirTouch Waiver Petition at 7-10; AirTouch Waiver Reply at 3; *see also* Integrated Data Communications, *Ex Parte*, at 5 (May 28, 1999) (“IDC *Ex Parte*”); Wireless Consumers Alliance, Inc., Petition to Modify 47 C.F.R. § 20.18(e) & (f), at 3-5 (June 2, 1999) (“WCA Petition”).

<sup>10</sup> See *Public Notice*, FCC 99-132, *Commission Seeks to Facilitate Wireless E911 Implementation and Requests a Report*, at 4-5 (June 9, 1999). The Commission has required that

submits these targeted comments to assist the Bureau in its consideration of the pending Phase II waiver requests and its further development of policies and rules for E911 deployment.

As shown below, AirTouch supports allowing carriers using the handset option to choose to meet either deployment or penetration benchmarks for digital phones for purposes of demonstrating Section 20.18(e) compliance, assuming certain essential assumptions are met. Thus, AirTouch supports a deployment benchmark option for digital handset-based solutions, tied to the issuance of an order in this proceeding and the availability of equipment, which would ensure that carriers would begin to provide ALI-capable handsets before October 1, 2001. Alternatively, AirTouch supports a penetration benchmark option, ranging from 30% in Year 1 (as early as December 31, 2002, if the Commission acts promptly in this proceeding) to 90% in Year 5, again tied equipment availability and the ultimate issuance of an order.<sup>11</sup>

As discussed herein, AirTouch's proposal commits to notably higher penetration rates for the initial years of deployment of ALI-capable handsets. AirTouch submits that any problems with network-based subscribers roaming into handset-based markets will likely be small, as will the inevitable issue of handset retention by certain subscribers, if handset solutions prove viable. In any event, calls for this expected small subset of customers can be forwarded using Phase I techniques. Finally, while AirTouch would support strengthened location accuracy for handsets using the

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a cost recovery mechanism be in place in a state as a prerequisite to Phase I E911 deployment, but has not prescribed any particular methodology for recovering costs. *See* 47 C.F.R. § 20.18(f); *E911 Report and Order*, 11 F.C.C.R. at 18722. AirTouch does note for the record that cost information concerning Phase II solutions has been very incomplete to date. Preliminary indications are that network solutions may be very costly to deploy (and may even be cost prohibitive). AirTouch has thus far been unable to gather cost information from handset solution vendors, despite requesting such information.

<sup>11</sup> Specific time frames are discussed *infra* at Section I.A.2.

Circular Error Probability (“CER”) methodology, and will use technologies meeting industry standards, it would oppose any attempt by the PSAP to mandate a particular technology choice.

By giving carriers the option to satisfy Phase II obligations by a variety of technologies, carriers will also be able to potentially “switch” solutions if one technology proves not available. For example, although AirTouch has not yet chosen a particular Phase II solution, it continues to be troubled by some of the apparent shortcomings of network-based solutions in rural and other areas where there is insufficient network infrastructure to permit triangulation of signals, due to fewer cell sites and greater use of omnidirectional signals.<sup>12</sup> By giving carriers an option, carriers which initially choose a network solution would be in a position to thereafter elect a “fall-back” handset or hybrid solution, if the network solution proves unsatisfactory. Similarly, if a carrier using a handset-based solution is consistently unable to achieve the penetration benchmarks over time, despite best efforts, AirTouch is hopeful that “fall-back” network solutions may provide alternative compliance means. For example, in this regard, AirTouch is exploring whether a network service bureau may be feasible using a network-based solution to comply with Section 20.18(e).<sup>13</sup> Thus, although carriers and the Commission must rely in part upon unproven projections with regard to any Phase II ALI solution, this need not be a weakness where multiple options allow carriers a fall-back position if a particular solution proves not viable.

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<sup>12</sup> See AirTouch Waiver Reply at 16; WCA Petition at 3-4.

<sup>13</sup> Such bureaus may form to take advantage of economies of scope and to reduce equipment and site redundancy, thereby enabling multiple carriers to utilize the services of a single entity to relay 911 calls to the PSAP.



## DISCUSSION

### I. IF A HANDSET SOLUTION PROVES VIABLE, CARRIERS SHOULD BE ALLOWED TO MEET EITHER DEPLOYMENT OR PENETRATION BENCHMARKS

The Commission first seeks comment on specific standards that should apply to handset-based solutions as part of Phase II requirements, or as a condition of any Phase II waiver grant, using the proposals of SnapTrack, Inc. ("SnapTrack") and the Association of Public-Safety Communications Officials-International, Inc. ("APCO") as a focus for targeted comment.<sup>14</sup> In general, SnapTrack has proposed that carriers should be deemed to be in compliance with Section 20.18(e) if they meet a specific deployment schedule.<sup>15</sup> Conversely, APCO has proposed that waiver conditions include both deployment and subscribership/use penetration benchmarks.<sup>16</sup> Under both

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<sup>14</sup> At least two other entities have recently submitted additional proposals regarding handset-based solutions. See Integrated Data Communications, *Ex Parte* (May 28, 1999) ("IDC *Ex Parte*"); Wireless Consumers Alliance, Inc., Petition to Modify 47 C.F.R. § 20.18(e) & (f) (June 2, 1999) ("WCA Petition"). While their proposals vary, they demonstrate the difficult situation facing carriers, manufacturers, and public interest groups in grappling with this issue. Like the FCC, carriers, while acting in good faith, are often caught in the middle of conflicting claims made by manufacturers of both network and handset-based solutions. Carriers are attempting to respond based upon the information made available to them by manufacturers, recognizing it is incomplete. As discussed herein, AirTouch is not ready to recommend the abandonment of network solutions, as WCA proposes, nor is it ready to endorse another solution. This situation again points out the need for prompt action by the Commission so that all parties will have the guidance they need to move forward and implement Phase II ALI. AirTouch is also hopeful that the upcoming technology forum scheduled for June 28 may help illuminate and resolve the issues, and conflicting claims to date.

<sup>15</sup> Specifically, SnapTrack's proposal would require carriers to begin to deploy location-capable handsets by January 1, 2001, and to deploy only location-capable handsets after December 31, 2001. See SnapTrack Comments at 4.

<sup>16</sup> For example, APCO would condition waivers to require that carriers begin to deploy ALI-capable handsets no later than January 1, 2001, with 80 percent of handsets being deployed offering ALI capability by December 31, 2001, and 100 percent offering ALI capability by

proposals, carriers utilizing a handset-based solution would be required to start providing ALI-capable handsets before the October 1, 2001, deadline, and to provide ALI-capable handsets with a greater degree of accuracy than required under the Commission's rules.<sup>17</sup> APCO also seeks to have carriers implement technologies meeting industry standards for interfacing with other carriers and PSAPs.<sup>18</sup>

Assuming certain criteria discussed herein are met, AirTouch suggests allowing carriers to elect between the following options for achieving compliance: (1) the Commission would deem carriers compliant if they meet certain benchmarks for deployment of ALI-capable phones, including the requirement to offer ALI-capable handsets for sale to customers prior to October 1, 2001, tied to the effective date of an order resolving the issues in this proceeding; or alternatively (2) the Commission would also deem carriers compliant if they commit to achieving specified subscribership/use penetration benchmarks, the first of which could be triggered as soon as December 31, 2002, tied to prompt Commission action in this proceeding, which is consistent with APCO's proposal and would allow time for manufacturing, distribution and promotion of potential handset solutions.

These options are discussed in greater detail below. Again, by allowing carriers choosing a handset solution to satisfy Section 20.18(e) by meeting either deployment or penetration

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December 31, 2002. Moreover, APCO proposes the following penetration schedule: 25 percent of all phones in use on the carrier's system must be ALI-capable by the end of 2002; 50 percent must be ALI-capable by the end of 2003; 75 percent must be ALI-capable by the end of 2004; and 100 percent must be ALI-capable by the end of 2005. APCO, Further Comments, at 2-3 (May 25, 1999) ("APCO Further Comments"). Carriers not meeting the benchmarks under APCO's proposal would be subject to waiver revocation, fines, or even license revocation. *See* discussion *infra* at 12-13.

<sup>17</sup> SnapTrack proposes a location accuracy of 90 meters using CEP methodology.

<sup>18</sup> *See* APCO Further Comments at 3.

benchmarks, carriers will have the maximum flexibility to begin offering Phase II ALI services to the public at the earliest possible dates.

**A. Subject to Certain Criteria Discussed Herein, AirTouch Would Support Giving Carriers the Option to Choose Deployment or Penetration Benchmarks to Establish Phase II Compliance**

**1. Deployment Benchmarks**

Consistent with proposals of both SnapTrack and APCO, AirTouch reiterates that if a carrier chooses a handset approach, it should be deemed compliant if it begins to offer ALI-capable digital or dual-mode handsets prior to October 1, 2001. AirTouch supports a commitment by carriers choosing handset-based approaches to agree to place an order with a handset manufacturer upon the effective date of a post-rulemaking order granting a waiver or modifying Section 20.18(e) to permit handset solutions to E-911 deployment. This commitment would then enable carriers electing to use a handset-based approach to begin offering ALI-capable digital or dual-mode handsets within an 18 month time frame after the effective date of the order.<sup>19</sup> Assuming the Commission acts expeditiously, this may make the goal of offering ALI-capable handsets by January 1, 2001, a reasonable one. Depending upon when the Commission is able to finalize an order and the commercial availability of compliant equipment, AirTouch would support the offering of only ALI-capable digital or dual-mode handsets within the range of December 31, 2001, as suggested by SnapTrack, and December 31, 2002, as suggested by APCO.

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<sup>19</sup> Such a proposal is consistent with APCO's acknowledgment that the dates it suggests are based upon an assumption that the FCC will act expeditiously on this matter. *See* APCO Further Comments at 2 n.2. Any delay in FCC action will obviously impact deployment/performance benchmark achievement dates.

## **2. Penetration Benchmarks**

As an alternative to agreeing to deploy only ALI-capable digital or dual-mode phones by a target date, AirTouch is supportive of setting benchmarks, ranging from 30% in Year 1 to 90% in Year 5, for subscribership/use of ALI-capable digital or dual-mode handsets. Consistent with APCO's proposal, the first penetration benchmark would be triggered at approximately December 31, 2002.<sup>20</sup> As APCO recognizes, however, this date, and the yearly benchmarks that follow, are dependent upon prompt Commission action in this proceeding.<sup>21</sup> Thus, if the FCC order in this proceeding is delayed, the benchmark dates must in turn be revised.

As an administratively simple solution to address the uncertainty involved with the timing of any Commission decision, AirTouch suggests that the first of these proposed benchmarks (30% percent in Year 1) be triggered as of 42 months from the effective date of an FCC order resolving the issues in this proceeding.<sup>22</sup> This time frame would include sufficient time for the development and manufacturing cycle to conclude and for distribution and promotion efforts to advance in earnest. Benchmarks in each subsequent year would be triggered in consecutive 12-month increments. Again, these dates comport with the timelines in the APCO proposal.

Based on the foregoing, AirTouch proposes the following penetration schedule:

- 30% of all digital phones in use on the carrier's system should be ALI capable in Year 1;
- 55% of all digital phones in use on the carrier's system should be ALI capable in Year 2;
- 70% of all digital phones in use on the carrier's system should be ALI capable in Year 3;

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<sup>20</sup> This date is slightly more than 42 months after these comments will be filed with the Commission.

<sup>21</sup> See APCO Further Comments at 2.

<sup>22</sup> See *supra* note 20.

- 85% of all digital phones in use on the carrier's system should be ALI capable in Year 4; and
- 90% of all digital phones in use on the carrier's system should be ALI capable in Year 5.

AirTouch bases these deployment benchmarks, which are more aggressive than APCO's figures in the early years but never actually reach full 100% penetration, upon a variety of factors, including analysts' projections for handset turnover, internal projections, and review of historical market trends governing the introduction of new technologies.

For example, historical experience, summarized in Attachment 1, reveals that the penetration rate of new technologies is asymptotic ("S"-shaped if plotted on a graph) in nature, and approaches but never actually reaches the 100% penetration threshold. In other words, new technologies are adopted at a relatively low rate in the beginning, then rapidly expand in the marketplace, followed by a slowing of sales, never quite reaching a 100% penetration rate. This trend has been borne out with countless other technologies, including televisions, microwaves, automobiles, VCRs, and even landline telephones.

With regard to industry and internal forecasts, in the case of ALI-capable digital handsets, initial deployment is expected to be particularly rapid, because the next generation of digital handsets to hit the market in the 2001/2002 time frame will offer new advanced service and feature options, including data capabilities, which are expected to be extremely highly desired by consumers. Although high penetration rates are expected in short order, and are expected to approach 90% in Year 5, full 100% penetration is unlikely because of handset retention by a small percentage of subscribers who will choose to keep their non-ALI capable phones. At this point, failure to reach 100% penetration becomes a customer choice and privacy issue, and the ready availability of ALI-capable handsets at competitive prices should satisfy Section 20.18(e)'s Phase II requirements. In

fact, failure to reach full penetration has the benefit of allowing analog subscribers that might not otherwise be able to afford an upgraded telephone to continue to have access to mobile service and its attendant emergency benefits.<sup>23</sup>

**B. The Commission Should Apply A Good Faith/Best Efforts Standard for Measuring Compliance**

AirTouch emphasizes that these benchmarks, by definition, are appropriate *guidelines* for measuring compliance with Section 20.18(e) over time, and should not be viewed as an absolute mandatory numerical value which must be achieved in each of the five years. For example, while carriers should certainly commit to placing orders for ALI-capable digital phones in a timely manner, and to aggressively working with vendors to sell and promote the phones, carriers cannot be held responsible for vendor failure to broadly produce commercially available ALI-capable digital handsets in popular digital models in the marketplace. Instead, the Commission should apply a good faith/best efforts standard to measure compliance. Such a flexible standard is necessarily inherent in any benchmark based upon projected future occurrences. Here, the numbers are based in part upon projected subscriber growth rates and handset turnover, derived from analysts' forecasts and historical data, which must be realized for the benchmarks to be sustained. AirTouch believes that the projections are realistic, but the Commission should acknowledge external factors which may impact their achievement.

AirTouch's experience in the industry validates its belief that the marketing of new features, particularly safety features like ALI-capable digital handsets, greatly drives consumer demand and

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<sup>23</sup> See discussion *infra* at 16. Again, the acceptance rate for new technologies confirms that 100% penetration will be nearly reached but never fully achieved.

acceptance.<sup>24</sup> If AirTouch chooses a handset option, AirTouch intends to emphasize the availability of ALI-capable digital phones in its marketing and promotional efforts, and to educate consumers in this regard. First and foremost, it is in the public interest to do so, and carriers recognize and intend to comply with their Phase II obligations. Second, AirTouch and other carriers have invested heavily in their digital networks, and it simply makes good business sense for them to encourage greater use of their digital networks. Given these built-in incentives to market and to educate consumers, no mandates are required in this regard. Thus, although carriers should clearly agree to undertake promotional and educational efforts to market the new phones and educate consumers, absent willful disregard for the rules and chronic failure to meet the benchmarks over time, AirTouch does not believe that waiver revocation or other extreme sanctions proposed by APCO are necessary or appropriate.

**C. AirTouch Would Support Strengthened Location Accuracy for Handset Solutions, and Intends to Use Technologies Meeting Industry Standards**

With regard to location accuracy, AirTouch would support a proposal that carriers commit to an average accuracy level for handset solutions that exceeds the Commission's current Phase II accuracy requirement, consistent with its previous comments.<sup>25</sup> Likewise, with regard to APCO's proposal that carriers use technologies meeting industry standards, carriers such as AirTouch clearly intend to implement technologies that meet industry standards for interfacing with all other carriers

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<sup>24</sup> For example, in the automotive context, AirTouch notes that airbags were widely promoted and accepted by consumers at rates — and in a time frame — that greatly exceeded initial projections.

<sup>25</sup> See, e.g., AirTouch Waiver Petition at 6.

and PSAPs.<sup>26</sup> AirTouch notes, however, that neither APCO's *ex parte* filing, nor the Commission's *Notice*, discusses in detail what is meant by the proposed interfacing condition. To the extent something is intended other than following industry standards, the Commission should so state to permit the filing of further responsive comments on this point. Moreover, AirTouch would oppose any attempt by the PSAPs to mandate a particularly technology choice regarding E911 obligations.

## **II. BASED ON TECHNOLOGICAL CONVERSION AND THE SPECIAL CONSIDERATIONS ASSOCIATED WITH LEGACY HANDSETS, BENCHMARKS SHOULD INCLUDE ONLY DIGITAL PHONES**

AirTouch's analysis of industry trends, coupled with statistical reports compiled by industry forecasters, shows that the use and sale of digital handsets is expected to increase dramatically in the next several years, dwarfing the sale and use of analog handsets after 2002. In response to consumer demands for new and advanced services, carriers are investing heavily in new digital technologies. These new technologies are expected to result in increased capacity, improved service quality, additional features/options, and a platform for new advanced data services (*e.g.*, Internet access, ability to send E-mail and other short messaging, *etc.*). As customers flock to these new digital handsets to take advantage of the services and features they desire, the use and sale of analog handsets is expected to continue to fall dramatically. Moreover, many new analog sales are in the form of dual-mode phones that operate in both analog and digital formats.

For example, while today approximately 50% of cellular phone users rely upon analog technology, this number is projected to decline dramatically to 4% of the total by 2002, and to less

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<sup>26</sup> AirTouch understands that the Telecommunications Industry Association ("TIA") should promulgate final standards for handsets within 1-2 months.



than 1% by 2004, with digital and dual-mode phones making up the difference.<sup>27</sup> Similarly, analog phone sales/shipments are expected to decline from more than 5 million currently, to 700 thousand or less in 2002, to negligible amounts by 2004 (representing less than 1% of total units), while digital phone sales/shipments escalate to as high as 84 million by 2004.<sup>28</sup> At the same time, cellular carriers in particular are investing heavily in the digitalization of their networks to offer greater capacity and additional services and quality. As a result, it is becoming more cost-effective to serve customers on modern digital networks than on analog networks. Thus, carriers are clearly incented to encourage greater migration to digital phones and dual-mode phones, which will offer Phase II ALI capability when operating in digital mode. This effort will lead to lower costs, allow the provision of new services, and increase market share in the growing digital market.

For these reasons, any benchmarks adopted by the Commission should apply only to digital handsets. For the shrinking base of analog handset users, AirTouch believes the Commission should recognize the availability of Phase I location information as sufficient for E911 compliance purposes. This is particularly the case given the Commission's recent adoption of new requirements to improve the ability of analog cellular phones users to successfully complete wireless 911 calls, including Adequate/Strongest Signal, Automatic A/B Roaming-Intelligent Retry, and Selective Retry.<sup>29</sup> These new requirements are unique to analog cellular services and were explicitly excluded

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<sup>27</sup> See Strategy Analytics Ltd., US Wireless Voice Market Forecast Update, § 5 (1999-2004) (March 1999).

<sup>28</sup> See *id.* at §§ 3.2, 5; The Yankee Group, Mobile Phone Series, Report Vol. 7, No. 10, § III (April 1999).

<sup>29</sup> See *Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, *Second Report and Order*, FCC 99-96 (rel. June 9, 1999) (*E911 Second Report and Order*).

from “the rapidly growing digital cellular, PCS, and SMR services,”<sup>30</sup> demonstrating Commission recognition that the application of different requirements to analog and digital technologies is appropriate, especially with respect to E911. The Commission should follow the same approach here.

Moreover, AirTouch is concerned that including analog phones within any benchmarks would necessitate what could be expensive upgrades to make analog phones ALI-capable, which could then make them inaccessible for the portion of the population for whom they are most attractive. Currently, the price of analog handsets is lower than the price of their digital counterparts, in part because of the different service quality and features provided. This lower price makes them accessible to a segment of the populace that might be priced out of the marketplace were the prices to rise. Any upgrades in the analog setting will be more expensive than in the digital context because of the diminishing customer base for analog phones. The Commission should not disadvantage the legacy analog database, and should not undermine the viability of potential handset solutions in such a fashion.

### **III. IF THE PROMISE OF HANDSET SOLUTIONS IS REALIZED, THE ROAMER ISSUE WILL BE SMALL AND PHASE I LOCATION CAPABILITY WILL REMAIN**

The Bureau requests additional comments addressing its concern that customers without ALI-capable handsets roaming outside of network-based service areas and into handset-based service areas will not be able to avail themselves of ALI technology.<sup>31</sup> AirTouch submits that if the promise

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<sup>30</sup> *Id.* at ¶ 89.

<sup>31</sup> *Notice* at 5-6.

of a handset-based solution to Phase II ALI deployment is realized, then the roamer issue should not be significant.<sup>32</sup> For example, as a result of handset churn and the fact that manufacturers will take advantage of economies of scale and customer demand to mass produce ALI-capable handsets, it has been predicted that 95 percent of subscribers could have ALI compatible phones by 2004.<sup>33</sup>

Again, AirTouch emphasizes that it has not yet chosen a particular technology, and if the majority of carriers ultimately opt to use a network-based solution and not a handset based solution, then the Commission may need to revisit the roamer issue. The Commission should not, however, prejudge the success or failure of a particular option at this juncture. Instead, the carriers and the Commission can take certain steps now to minimize concerns regarding network-based customers who roam in areas served by handset solutions. For example, customers can be educated that they have a choice of buying an ALI-enabled phone to take advantage of Phase II location information, or renting an ALI-capable phone in any handset-based markets where they roam. In addition, for those roamers who choose not to acquire an ALI phone for roaming purposes, the carrier in the roamer's market will still be able to provide the PSAP with Phase I-level location information.<sup>34</sup> AirTouch submits that this should be sufficient for compliance purposes.

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<sup>32</sup> AirTouch presumes that any penetration benchmarks adopted by the Commission include only subscribers, and not roamers. Carriers can only affect those phones they offer to their customers, and have no control over the types of phones other carriers in often distant markets offer to their customers who roam outside their home market.

<sup>33</sup> See AirTouch Waiver Petition at 11-12, 14.

<sup>34</sup> See AirTouch Waiver Petition at 14.

#### **IV. AIRTOUCH REITERATES ITS SUPPORT FOR USING THE CIRCULAR ERROR PROBABILITY (“CEP”) METHODOLOGY FOR DETERMINING ALI ACCURACY**

Finally, the Bureau seeks comment on reevaluating the current methodology used to determine ALI accuracy.<sup>35</sup> As noted above, Section 20.18(e) requires licensees to provide to the designated PSAP “the location of all 911 calls by longitude and latitude such that the accuracy for all calls is 125 meters or less using a Root Mean Square (RMS) methodology.”<sup>36</sup> As AirTouch has previously noted, there has been some dispute regarding the desirability of using RMS as a measure of ALI reliability.<sup>37</sup> Accordingly, AirTouch reiterates its support for the use of CEP in evaluating ALI accuracy. AirTouch believes this methodology will provide the best ALI accuracy for all callers.<sup>38</sup>

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<sup>35</sup> Notice at 6-7.

<sup>36</sup> 47 C.F.R. § 20.18(e).

<sup>37</sup> See AirTouch Waiver Petition at 8 n.22 (citing Ericsson, Inc., *Ex Parte*, at 4-10 (Mar. 20, 1998) (discussing the merits of CEP versus RMS) (“Ericsson *Ex Parte*”).

<sup>38</sup> See Ericsson *Ex Parte* at 4-10.

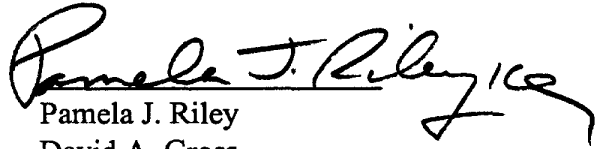
## CONCLUSION

For the reasons stated above and in AirTouch's previous filings, AirTouch respectfully requests that the Commission grant the pending waiver requests, or modify Section 20.18(e), to permit the use of handset-based or hybrid Phase II ALI solutions as specified herein. The public interest would be served by such Commission action.

Respectfully submitted,

AirTouch Communications, Inc.

By:

  
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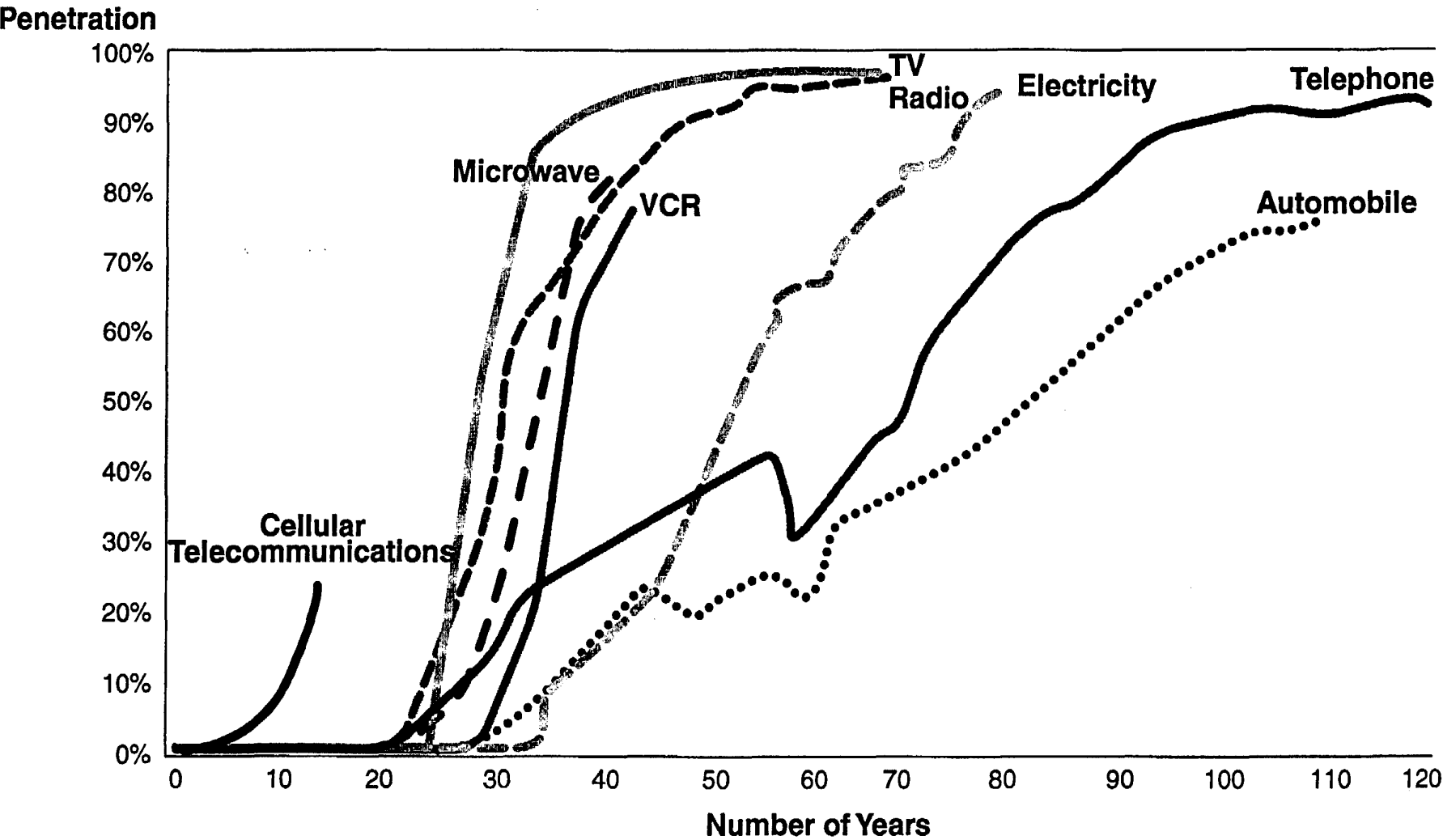
June 17, 1999

## ATTACHMENT 1

Chart Depicting Patterns to Consumer Adoption of Technology

**ACCEPTANCE OF TECHNOLOGY**

○ Historical data show similar patterns to consumer adoption of technology



CERTIFICATE OF SERVICE

I, Jo-Ann G. Monroe, hereby certify that on this 17th day of June, 1999, copies of the foregoing "Comments of AirTouch Communications, Inc." in CC Docket No. 94-102, in response to DA 99-1049, were served by hand on the following:

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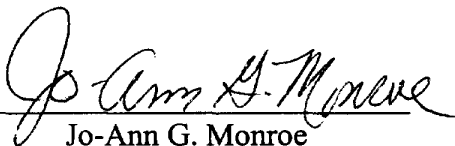
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